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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/401,584	09/22/1999	CHARLES D. GAVRILOVICH	GAVRILOVICH-	4845

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EXAMINER

CONTEE, JOY KIMBERLY

ART UNIT

PAPER NUMBER

2681

DATE MAILED: 09/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.
09/401,584

Applicant(s)
Gavrilovich

Examiner
Joy K. Contee

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2681



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Sep 22, 1999
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1535 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-112 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 63-88 and 97-112 is/are allowed.
- 6) ☒ Claim(s) 30-62, 89, and 93 is/are rejected.
- 7) ☒ Claim(s) 90-92 and 94-96 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3 6) ☐ Other: _____

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DETAILED ACTION

Claim Objections

1. Claims 84 and 108 are objected to because of the following informalities: there appears to be a typographical error in the aforementioned claims. Each claim references "a speed greater than 45 kilometers within...". The correct unit of speed appears to be inadvertently omitted, i.e., it should read "45 kilometers per hour". Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 37 and 43 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 37 and 43 recite the limitation "the frequency band" in lines 5-6 . It is unclear as to which frequency band this limitations refers to (i.e., a frequency band higher or a frequency band lower).

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Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 37 and 43 rejected under 35 U.S.C. 102(b) as being anticipated by Mears et al. ("Mears"), U.S. Patent No. 4,539,706.

Regarding claim 37, Mears discloses an apparatus adapted to move in accordance with a motion of a mobile unit wherein the motion is relative to a fixed radio port, the apparatus comprising:

a receiver adapted to receive a signal transmitted from the fixed radio port within a frequency band (i.e., F1) inherently higher than a low frequency radio frequency band (col. 4, lines 40-57); and

a transmitter adapted to transmit a resultant signal within [the] frequency band to the mobile unit in accordance with the signal transmitted from the fixed radio port (col. 4, lines 40-57).

Regarding claim 43, Mears discloses an apparatus adapted to move in accordance with a motion of a mobile unit wherein the motion is relative to a fixed radio port, the apparatus comprising:

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a receiver adapted to receive a signal transmitted from the mobile unit within a frequency band inherently higher than a low frequency radio frequency band (col. 4, lines 40-57); and

a transmitter adapted to transmit a resultant signal within the frequency band to the fixed radio port in accordance with the signal transmitted from the mobile unit (col. 4, lines 40-57).

7. Claims 54-56 and 58 are rejected under 35 U.S.C. 102(b) as being anticipated by Charas et al. ("Charas"), U.S. Patent No.5,404,570.

Regarding claim 54, Charas discloses a movable base station adapted to have a motion relative to a fixed port along a predetermined path and in accordance with an anticipated motion of a mobile unit, comprising:

a first radio interface adapted to establish a first communication link between the movable base station and the mobile unit (col. 1, lines 56-62); and

a second radio interface adapted to establish a second communication link between the moveable base station and the fixed port wherein the motion of the movable base station is independently controllable to the motion of the mobile unit (col. 1, lines 62-67 to col. 2, lines 1-15).

Regarding claim 55, Charas discloses a moveable base station in accordance with claim 54, wherein the first communication link and the second communication are established within a frequency band higher than a low frequency band (col. 3, lines 15-18).

Regarding claim 56, Charas discloses a moveable base station in accordance with claim 55, wherein the frequency band has a lower limit of 300 megahertz (col. 3, lines 15-18).

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Regarding claim 58, Charas discloses a movable base station in accordance with claim 56, wherein the frequency band is a millimeter wave frequency band (i.e., 30 to 300 megahertz range) (col. 3, lines 15-18).

Regarding claim 61, Charas discloses a movable base station in accordance with claim 54 wherein the predetermined path has a contour corresponding to a roadway contour and the anticipated motion of the mobile unit is on the roadway (i.e., tunnel or train track path) (col. 2, lines 24-41).

Regarding claim 62, Charas discloses a movable base station in accordance with claim 61, wherein the mobile base station is further adapted to travel on a conveyor device along the predetermined path (col. 2, lines 29-41).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 38, 40, 44 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mears, in view of Briskman et al. ("Briskman"), U.S. Patent No. 5,485,485.

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Regarding claims 38,40,44 and 46, Mears discloses the limitations of claims 37 and 43. Mears does not explicitly disclose an apparatus according to claims 37 and 43, wherein the frequency band has a lower limit of 300 megahertz (i.e., millimeter wave frequency band having a wavelength from 1 mm to 0.1 mm (300 GHz to 3000GHz).

In a similar field of endeavor, Briskman discloses an apparatus according to claims 37 and 43, wherein the frequency band has a lower limit of 300 megahertz (col. 3, lines 34-47).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified Mears to include operation in a system of two or more satellites (i.e., repeaters) using UHF frequencies including the range from 300 to 3,000 MHZ for the purpose of broadcasting signals to receivers at or near the earth's surface (col. 3, lines 21-27).

10. Claims 39 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mears and Briskman, in view of Ishikawa et al. ("Ishikawa"), U.S. Patent No. 5,696,614.

Regarding claims 39 and 45, Mears and Briskman disclose the limitations of claims 38 and 44. The combination does not disclose wherein the frequency band is an optical frequency band.

In a similar field of endeavor, Ishikawa discloses an optical wavelength multiplex transmission method and optical dispersion compensation method (col. 7, lines 18-44)

At the time of the invention it would have been obvious to one ordinary skill in the art to have included operation using an optical frequency band for the purpose of using signal light

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waves of some sort in order to transmit from the transmitter to the repeater to the receiver in a situation where a line of sight communication path is available.

11. Claims 41,42 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mears and Briskman, in view of Barkats, U.S. Patent No. 5,615,407.

Regarding claims 41, 42,47 and 48, Mears and Briskman disclose the limitations of claims 40 and 46. The combination does not explicitly disclose a frequency spectrum from 50 Ghz to 70 GHz (i.e., an oxygen absorption frequency band).

In a similar field of endeavor, Barkats discloses a satellite (i.e., repeaters) communication using a range of available frequencies from 30GHz to 50GHz, for example (col. 4, lines 15-20). Inherently a greater range would be available,e.g., 50 GHz to 70 Ghz.

At the time of the invention it would have been obvious to one of ordinary skill in the art to have modified the combination of Mears and Briskman to include a higher frequency for communication for the purpose of utilizing a range in which there is not a shortage.

12. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Charas, in view of Ishikawa.

Regarding claims 39 and 45, Charas discloses the limitations of claim 56. Charas does not disclose wherein the frequency band is an optical frequency band.

In a similar field of endeavor, Ishikawa discloses an optical wavelength multiplex transmission method and optical dispersion compensation method (col. 7, lines 18-44)

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At the time of the invention it would have been obvious to one ordinary skill in the art to have included operation using an optical frequency band for the purpose of using signal light waves of some sort in order to transmit from the transmitter to the repeater to the receiver in a situation where a line of sight communication path is available.

13. Claims 59 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Charas, in view of Barkats.

Regarding claims 59 and 60, Charas disclose the limitations of claim 58. Charas does not explicitly disclose a frequency spectrum from 50 Ghz to 70 GHz (i.e., an oxygen absorption frequency band).

In a similar field of endeavor, Barkats discloses a satellite (i.e., repeaters) communication using a range of available frequencies from 30GHz to 50GHz, for example (col. 4, lines 15-20). Inherently a greater range would be available, e.g., 50 GHz to 70 Ghz.

At the time of the invention it would have been obvious to one of ordinary skill in the art to have modified Charas to include a higher frequency for communication for the purpose of utilizing a range in which there is not a shortage.

Double Patenting

14. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible

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harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CAR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CAR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CAR 3.73(b).

15. Claims 30-36,49-54,61,62,89 and 93 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,2,5,6 and 8 of U.S. Patent No. 6,026,277. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1,2,5,6 and 8 of U.S. Patent No. 6,026,277, encompass the scope of claims 30-36,49-54,61,62,89 and 93 of the instant application.

Regarding claims 30-36,49-54,61,62,89 and 93, the instant application claims the transmitter has a motion relative to Earth along a predetermined path, wherein the motion of the transmitter is controlled independently to the anticipated motion of the mobile unit. U.S. Patent

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No. 6,026,277 describes a moveable base station, moving a specified direction and supported by a conveyor, which instant application even claims in dependent claims (i.e., 32,36 and 62).

Omission of element and its function in combination is obvious expedient if remaining elements perform same functions as before. In re KARLSON (CCPA) 136 USPQ 184 (1963)

16. Claims 30-36,49-54,61,62,89 and 93 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 11 of U.S. Patent No. 5,729,826. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in 5,729,826, encompass the aforementioned claims of the instant application.

Regarding claims 30-36,49-54,61,62,89 and 93, the instant application claims the transmitter has a motion relative to Earth along a predetermined path, wherein the motion of the transmitter is controlled independently to the anticipated motion of the mobile unit. U.S. Patent No. 5,729,826 describes, *inter alia*, a stationary interface unit connected to the telephone office via a signal transmission connection; a plurality of spaced apart moveable base stations, each of the base stations uniquely associated with the telephone office and supported on a conveying device for limited movement in the specified direction within an area defined relative to the stationary interface, which is analogous to the predetermined path claimed in the instant application.

Omission of element and its function in combination is obvious expedient if remaining elements perform same functions as before. In re KARLSON (CCPA) 136 USPQ 184 (1963)

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Allowable Subject Matter

17. Claims 63-88 and 97-112 are allowed.

18. Claims 90-92,94-96 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

19. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 63-82 and 97-102, prior art of record fails to disclose an apparatus adapted to move in accordance with a movement of mobile unit moving relative to a plurality of fixed radio ports, the apparatus comprising: a transmitter adapted to transmit, within the frequency band, a resultant signal to the mobile unit in accordance with at least one of the plurality of signals; and a processor adapted to maximize an amount of transferred information to the mobile unit by evaluating a quality of each of the plurality of signals transmitted from the plurality of fixed radio ports.

Regarding claims 83-88 and 107-112, prior art fails to disclose the detailed description involving the following: a communication system adapted to simultaneously provide a communication channel having a data rate of at least 2 megabits per second to each of a plurality of mobile units traveling at a speed greater than 45 kilometers per hour (=28 miles per hour), wherein the density of mobile units to geographic area is at least 6,500 mobile users per square kilometer.

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Regarding claims 90-92 and 94-96, prior art fails to disclose the combination of the moveable base station including adjusting the speed of the transmitter in accordance with the motion of the mobile unit.

Regarding claims 103-106, prior art fails to disclose a method of providing a communication connection between a communication network and a plurality of mobile units having a motion relative to a plurality of fixed ports, wherein the plurality of fixed ports are communicatively coupled to the communication network, the method comprising the steps of. establishing a first communication link between the plurality of mobile units and a first fixed port of the plurality of fixed ports through a movable base station having a motion in accordance with the motion of the mobile units; and simultaneously handing off the plurality of mobile units to a second fixed port of the plurality fixed ports.

These distinct features render the claims allowable.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Charas et al., U.S. Patent No. 5,404,570, discloses radio coverage in closed environment.

Mears et al., U.S. Patent No. 4,539,706, discloses a mobile vehicular repeater system.

Ishii et al., U.S. Patent No. 5,058,201, discloses a mobile telecommunications system which has multiple base stations each defining a miniature service zone and capable of communicating with mobile stations present in the service zone over a radio link.

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Alvesalo, U.S. Patent No. 5,384,824, discloses a method for carrying out location updating from a mobile cellular radiophone system to another cellular radiophone system.

Yokoi et al., U.S. Patent No. 5,282,239, discloses a cordless telephone system for moving conveyances.

Kamura, U.S. Patent No. 5,640,443, discloses a movable telephone communication system.

Gilhousen et al., U.S. Patent No. 5,109,390, discloses a diversity receiver in a CDMA cellular telephone system.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joy K. Contee whose telephone number is (703) 308-0149. The Examiner can normally be reached between 5:30 a.m. and 2:00 p.m., Monday- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost, can be reached on (703)305-4778.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703)306-0377

Any response to this action should be mailed to:

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Washington, D.C. 20231

or faxed to:

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(703) 872-9314, (for formal communications intended for entry)

Or:

(703) 872-9314, (for informal or draft communications, please label

"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).



Joy K. Contee

September 7, 2002



DWAYNE BOST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

9-9-02